

SEQUENCE LISTING

<110> Holtzman, Douglas A.
 Gearing, David P.
 Pan, Yang

<120> NOVEL GENES ENCODING PROTEINS HAVING
 PROGNASTIC, DIAGNOSTIC, PREVENTIVE, THERAPEUTIC AND OTHER
 USES

<130> 07334-324001

<150> US 09/712,726

<151> 2000-11-14

<150> US 08/820,364

<151> 1997-03-12

<150> US 09/757,421

<151> 2001-01-10

<150> US 08/843,652

<151> 1997-04-16

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<150> US 09/354,809

<151> 1999-07-16

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<151> 1997-09-26

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gtg gcg ctt caa gca act gag gca ggc ccc tac ggc gcc aac atg gaa	96
Val Ala Leu Gln Ala Thr Glu Ala Gly Pro Tyr Gly Ala Asn Met Glu	
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gac agc gtc tgc tgc cgt gat tac gtc cgt tac cgt ctg ccc ctg cgc	144
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Asp Ser Val Cys Cys Arg Asp Tyr Val Arg Tyr Arg Leu Pro Leu Arg
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gtg gtg ttg cta acc ttc agg gat aag gag atc tgt gcc gat ccc aga 240
 Val Val Leu Leu Thr Phe Arg Asp Lys Glu Ile Cys Ala Asp Pro Arg
 65 70 75 80

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 Val Pro Trp Val Lys Met Ile Leu Asn Lys Leu Ser Gln
 85 90

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 Val Val Lys His Phe Tyr Trp Thr Ser Asp Ser Cys Pro Arg Pro Gly
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 <223> n = A,T,C or G

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	Met	Glu	Gln	Arg	Gly	Gln	Asn	Ala	Pro	Ala	Ala	Ser	Gly	Ala		
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cg	aaa	agg	cac	ggc	cca	gga	ccc	agg	gag	gcg	cg	gga	gcc	agg	cct	217
Arg	Lys	Arg	His	Gly	Pro	Gly	Pro	Arg	Glu	Ala	Arg	Gly	Ala	Arg	Pro	
	15				20					25					30	
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Pro	Gln	Gln	Arg	Ala	Ala	Pro	Gln	Gln	Lys	Arg	Ser	Ser	Pro	Ser	Glu	
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Ile	Ser	Cys	Lys	Tyr	Gly	Gln	Asp	Tyr	Ser	Thr	His	Trp	Asn	Asp	Leu	
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Asp	Ile	Glu	Cys	Val	His	Lys	Glu	Ser	Gly	Ile	Lys	His	Ser	Gly	Glu	
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Ala	Pro	Ala	Val	Glu	Glu	Thr	Val	Thr	Ser	Ser	Pro	Gly	Thr	Pro	Ala	
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Arg Val Pro Lys Thr Leu Val Leu Val Val Ala Ala Val Leu Leu Leu

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 Cys Pro Pro Gly His His Ile Ser Glu Asp Gly Arg Asp Cys Ile Ser
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 Cys Lys Tyr Gly Gln Asp Tyr Ser Thr His Trp Asn Asp Leu Leu Phe
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 Cys Leu Arg Cys Thr Arg Cys Asp Ser Gly Glu Val Glu Leu Ser Pro
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 Cys Thr Thr Thr Arg Asn Thr Val Cys Gln Cys Glu Glu Gly Thr Phe
 130 135 140
 Arg Glu Glu Asp Ser Pro Glu Met Cys Arg Lys Cys Arg Thr Gly Cys
 145 150 155 160
 Pro Arg Gly Met Val Lys Val Gly Asp Cys Thr Pro Trp Ser Asp Ile
 165 170 175
 Glu Cys Val His Lys Glu Ser Gly Ile Lys His Ser Gly Glu Ala Pro
 180 185 190
 Ala Val Glu Glu Thr Val Thr Ser Ser Pro Gly Thr Pro Ala Ser Pro
 195 200 205
 Cys Ser Leu Ser Gly Ile Ile Ile Gly Val Thr Val Ala Ala Val Val
 210 215 220
 Leu Ile Val Ala Val Phe Val Cys Lys Ser Leu Leu Trp Lys Lys Val
 225 230 235 240
 Leu Pro Tyr Leu Lys Gly Ile Cys Ser Gly Gly Gly Asp Pro Glu
 245 250 255
 Arg Val Asp Arg Ser Ser Gln Arg Pro Gly Ala Glu Asp Asn Val Leu
 260 265 270
 Asn Glu Ile Val Ser Ile Leu Gln Pro Thr Gln Val Pro Glu Gln Glu
 275 280 285
 Met Glu Val Gln Glu Pro Ala Glu Pro Thr Gly Val Asn Met Leu Ser
 290 295 300
 Pro Gly Glu Ser Glu His Leu Leu Glu Pro Ala Glu Ala Glu Arg Ser
 305 310 315 320
 Gln Arg Arg Arg Leu Leu Val Pro Ala Ile Glu Gly Asp Pro Thr Glu
 325 330 335
 Thr Leu Arg Gln Cys Phe Asp Asp Phe Ala Asp Leu Val Pro Phe Asp
 340 345 350
 Ser Trp Glu Pro Leu Met Arg Lys Leu Gly Leu Met Asp Asn Glu Ile
 355 360 365
 Lys Val Ala Lys Ala Glu Ala Ala Gly His Arg Asp Thr Leu Tyr Thr
 370 375 380
 Met Leu Ile Lys Trp Val Asn Lys Thr Gly Arg Asp Ala Ser Val His
 385 390 395 400
 Thr Leu Leu Asp Ala Leu Glu Thr Leu Gly Glu Arg Leu Ala Lys Gln
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 Lys Ile Glu Asp His Leu Leu Ser Ser Gly Lys Phe Met Tyr Leu Glu
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 Gly Asn Ala Asp Ser Ala Met Ser
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taccgcc	atg gaa caa	cgg gga cag	aac gcc ccg	gcc gct tcg	ggg gcc	169
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	1	5	10			

cgg aaa agg	cac ggc cca	gga ccc agg	gag gcg cgg	gga gcc agg	cct	217
Arg Lys Arg	His Gly Pro	Gly Pro Arg	Glu Ala Arg	Gly Ala Arg	Pro	
15	20	25	30			

ggg ctc cgg	gtc ccc aag	acc ctt gtg	ctc gtt gtc	gcc gcg gtc	ctg	265
Gly Leu Arg	Val Pro Lys	Thr Leu Val	Leu Val Val	Ala Ala Val	Leu	
	35	40	45			

ctg ttg gtc	tca gct gag	tct gct ctg	atc acc caa	caa gac cta	gct	313
Leu Leu Val	Ser Ala Glu	Ser Ala Leu	Ile Thr Gln	Gln Asp Leu	Ala	
	50	55	60			

ccc cag cag	aga gcg gcc	cca caa caa	aag agg tcc	agc ccc tca	gag	361
Pro Gln Gln	Arg Ala Ala	Pro Gln Gln	Lys Arg Ser	Ser Pro Ser	Glu	
	65	70	75			

gga ttg tgt	cca cct gga	cac cat atc	tca gaa gac	ggt aga gat	tgc	409
Gly Leu Cys	Pro Pro Gly	His His Ile	Ser Glu Asp	Gly Arg Asp	Cys	
	80	85	90			

atc tcc tgc	aaa tat gga	cag gac tat	agc act cac	tgg aat gac	ctc	457
Ile Ser Cys	Lys Tyr Gly	Gln Asp Tyr	Ser Thr His	Trp Asn Asp	Leu	
	95	100	105		110	

ctt ttc tgc	ttg cgc tgc	acc agg tgt	gat tca ggt	gaa gtg gag	cta	505
Leu Phe Cys	Leu Arg Cys	Thr Arg Cys	Asp Ser Gly	Glu Val Glu	Leu	
	115	120	125			

agt ccc tgc	acc acg acc	aga aac aca	gtg tgt cag	tgc gaa gaa	ggc	553
Ser Pro Cys	Thr Thr Thr	Arg Asn Thr	Val Cys Gln	Cys Glu Glu	Gly	
	130	135	140			

acc ttc cgg	gaa gaa gat	tct cct gag	atg tgc cgg	aag tgc cgc	aca	601
Thr Phe Arg	Glu Glu Asp	Ser Pro Glu	Met Cys Arg	Lys Cys Arg	Thr	
	145	150	155			

ggg tgt ccc	aga ggg atg	gtc aag gtc	ggt gat tgt	aca ccc tgg	agt	649
Gly Cys Pro	Arg Gly Met	Val Lys Val	Gly Asp Cys	Thr Pro Trp	Ser	
	160	165	170			

gac atc gaa	tgt gtc cac	aaa gaa tca	ggc atc atc	ata gga gtc	aca	697
Asp Ile Glu	Cys Val His	Lys Glu Ser	Gly Ile Ile	Ile Gly Val	Thr	
	175	180	185		190	

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Val Ala Ala Val Val Leu Ile Val Ala Val Phe Val Cys Lys Ser Leu	
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Leu Trp Lys Lys Val Leu Pro Tyr Leu Lys Gly Ile Cys Ser Gly Gly	
210 215 220	
ggg ggg gac cct gag cgt gtg gac aga agc tca caa cga cct ggg gct	841
Gly Gly Asp Pro Glu Arg Val Asp Arg Ser Ser Gln Arg Pro Gly Ala	
225 230 235	
gag gac aat gtc ctc aat gag atc gtg agt atc ttg cag ccc acc cag	889
Glu Asp Asn Val Leu Asn Glu Ile Val Ser Ile Leu Gln Pro Thr Gln	
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gtc cct gag cag gaa atg gaa gtc cag gag cca gca gag cca aca ggt	937
Val Pro Glu Gln Glu Met Glu Val Gln Glu Pro Ala Glu Pro Thr Gly	
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Val Asn Met Leu Ser Pro Gly Glu Ser Glu His Leu Leu Glu Pro Ala	
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Gly Asp Pro Thr Glu Thr Leu Arg Gln Cys Phe Asp Asp Phe Ala Asp	
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aga ctt gcc aag cag aag att gag gac cac ttg ttg agc tct gga aag	1321
Arg Leu Ala Lys Gln Lys Ile Glu Asp His Leu Leu Ser Ser Gly Lys	
385 390 395	
ttc atg tat cta gaa ggt aat gca gac tct gcc atg tcc taagtgtgat	1370
Phe Met Tyr Leu Glu Gly Asn Ala Asp Ser Ala Met Ser	
400 405 410	


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<211> 411

<212> PRT

<213> Homo sapiens

<400> 6

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      20            25            30
Arg Val Pro Lys Thr Leu Val Leu Val Val Ala Ala Val Leu Leu Leu
      35            40            45

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Cys	Pro	Pro	Gly	His	His	Ile	Ser	Glu	Asp	Gly	Arg	Asp	Cys	Ile	Ser
				85					90					95	
Cys	Lys	Tyr	Gly	Gln	Asp	Tyr	Ser	Thr	His	Trp	Asn	Asp	Leu	Leu	Phe
			100					105					110		
Cys	Leu	Arg	Cys	Thr	Arg	Cys	Asp	Ser	Gly	Glu	Val	Glu	Leu	Ser	Pro
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Cys	Thr	Thr	Thr	Arg	Asn	Thr	Val	Cys	Gln	Cys	Glu	Glu	Gly	Thr	Phe
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Arg	Glu	Glu	Asp	Ser	Pro	Glu	Met	Cys	Arg	Lys	Cys	Arg	Thr	Gly	Cys
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Pro	Arg	Gly	Met	Val	Lys	Val	Gly	Asp	Cys	Thr	Pro	Trp	Ser	Asp	Ile
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Glu	Cys	Val	His	Lys	Glu	Ser	Gly	Ile	Ile	Ile	Gly	Val	Thr	Val	Ala
			180					185					190		
Ala	Val	Val	Leu	Ile	Val	Ala	Val	Phe	Val	Cys	Lys	Ser	Leu	Leu	Trp
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Lys	Lys	Val	Leu	Pro	Tyr	Leu	Lys	Gly	Ile	Cys	Ser	Gly	Gly	Gly	Gly
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Asp	Pro	Glu	Arg	Val	Asp	Arg	Ser	Ser	Gln	Arg	Pro	Gly	Ala	Glu	Asp
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Asn	Val	Leu	Asn	Glu	Ile	Val	Ser	Ile	Leu	Gln	Pro	Thr	Gln	Val	Pro
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Glu	Gln	Glu	Met	Glu	Val	Gln	Glu	Pro	Ala	Glu	Pro	Thr	Gly	Val	Asn
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Pro	Phe	Asp	Ser	Trp	Glu	Pro	Leu	Met	Arg	Lys	Leu	Gly	Leu	Met	Asp
			325					330						335	
Asn	Glu	Ile	Lys	Val	Ala	Lys	Ala	Glu	Ala	Ala	Gly	His	Arg	Asp	Thr
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Leu	Tyr	Thr	Met	Leu	Ile	Lys	Trp	Val	Asn	Lys	Thr	Gly	Arg	Asp	Ala
	355						360					365			
Ser	Val	His	Thr	Leu	Leu	Asp	Ala	Leu	Glu	Thr	Leu	Gly	Glu	Arg	Leu
	370					375					380				
Ala	Lys	Gln	Lys	Ile	Glu	Asp	His	Leu	Leu	Ser	Ser	Gly	Lys	Phe	Met
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<211> 2135

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (182)...(850)

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gacttcgcgg	gaccgtggcg	catgtttcct	gggagttact	gatcatcttc	tttgaagaaa		180
c atg aag tta cac tat gtt gct gtg ctt act cta gcc atc ctg atg ttc							229
Met Lys Leu His Tyr Val Ala Val Leu Thr Leu Ala Ile Leu Met Phe							
1		5				10	
ctg aca tgg ctt cca gaa tca ctg agc tgt aac aaa gca ctc tgt gct							277
Leu Thr Trp Leu Pro Glu Ser Leu Ser Cys Asn Lys Ala Leu Cys Ala		20				25	
agt gat gtg agc aaa tgc ctc att cag gag ctc tgc cag tgc cgg ccg							325
Ser Asp Val Ser Lys Cys Leu Ile Gln Glu Leu Cys Gln Cys Arg Pro		35				40	
gga gaa ggc aat tgc tcc tgc tgt aag gag tgc atg ctg tgt ctt ggg							373
Gly Glu Gly Asn Cys Ser Cys Cys Lys Glu Cys Met Leu Cys Leu Gly		50				55	
gcc ctt tgg gac gag tgc tgt gac tgt gtt ggt atg tgt aat cct cga							421
Ala Leu Trp Asp Glu Cys Cys Asp Cys Val Gly Met Cys Asn Pro Arg		65			70		
aat tat agt gac aca cct cca act tca aag agc aca gtg gag gag ctg							469
Asn Tyr Ser Asp Thr Pro Pro Thr Ser Lys Ser Thr Val Glu Glu Leu			85				
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cat gaa ccg atc cct tct ctc ttc cgg gca ctc aca gaa gga gat act							517
His Glu Pro Ile Pro Ser Leu Phe Arg Ala Leu Thr Glu Gly Asp Thr			100				
						105	
cag ttg aat tgg aac atc gtt tct ttc cct gtt gca gaa gaa ctt tca							565
Gln Leu Asn Trp Asn Ile Val Ser Phe Pro Val Ala Glu Glu Leu Ser			115				
						120	
cat cat gag aat ctg gtt tca ttt tta gaa act gtg aac cag cca cac							613
His His Glu Asn Leu Val Ser Phe Leu Glu Thr Val Asn Gln Pro His			130			135	
cac cag aat gtg tct gtc ccc agc aat aat gtt cac gcg cct tat tcc							661
His Gln Asn Val Ser Val Pro Ser Asn Asn Val His Ala Pro Tyr Ser					145		
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Ser Asp Lys Glu His Met Cys Thr Val Val Tyr Phe Asp Asp Cys Met					165		
						170	
tcc ata cat cag tgt aaa ata tcc tgt gag tcc atg gga gca tcc aaa							757
Ser Ile His Gln Cys Lys Ile Ser Cys Glu Ser Met Gly Ala Ser Lys			180				
						185	
tat cgc tgg ttt cat aat gcc tgc tgc gag tgc att ggt cca gaa tgt							805
Tyr Arg Trp Phe His Asn Ala Cys Cys Glu Cys Ile Gly Pro Glu Cys			195				
						200	
att gac tat ggt agt aaa act gtc aaa tgt atg aac tgc atg ttt							850
Ile Asp Tyr Gly Ser Lys Thr Val Lys Cys Met Asn Cys Met Phe							

210

215

220

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<211> 223

<212> PRT

<213> Homo sapiens

<400> 8

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			20						25					30	
Ser	Asp	Val	Ser	Lys	Cys	Leu	Ile	Gln	Glu	Leu	Cys	Gln	Cys	Arg	Pro
			35					40					45		
Gly	Glu	Gly	Asn	Cys	Ser	Cys	Cys	Lys	Glu	Cys	Met	Leu	Cys	Leu	Gly
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Ala	Leu	Trp	Asp	Glu	Cys	Asp	Cys	Val	Gly	Met	Cys	Asn	Pro	Arg	
65					70				75					80	
Asn	Tyr	Ser	Asp	Thr	Pro	Pro	Thr	Ser	Lys	Ser	Thr	Val	Glu	Glu	Leu
				85					90					95	
His	Glu	Pro	Ile	Pro	Ser	Leu	Phe	Arg	Ala	Leu	Thr	Glu	Gly	Asp	Thr
			100					105					110		
Gln	Leu	Asn	Trp	Asn	Ile	Val	Ser	Phe	Pro	Val	Ala	Glu	Glu	Leu	Ser
			115					120					125		
His	His	Glu	Asn	Leu	Val	Ser	Phe	Leu	Glu	Thr	Val	Asn	Gln	Pro	His
			130				135					140			
His	Gln	Asn	Val	Ser	Val	Pro	Ser	Asn	Asn	Val	His	Ala	Pro	Tyr	Ser
145					150				155					160	
Ser	Asp	Lys	Glu	His	Met	Cys	Thr	Val	Val	Tyr	Phe	Asp	Asp	Cys	Met
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Ser	Ile	His	Gln	Cys	Lys	Ile	Ser	Cys	Glu	Ser	Met	Gly	Ala	Ser	Lys
			180					185					190		
Tyr	Arg	Trp	Phe	His	Asn	Ala	Cys	Cys	Glu	Cys	Ile	Gly	Pro	Glu	Cys
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Ile Asp Tyr Gly Ser Lys Thr Val Lys Cys Met Asn Cys Met Phe
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<220>
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 <222> (1)...(2601)

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 Leu Leu Leu Gly Ser Arg Pro Ala Arg Gly Ala Gly Pro Glu Pro Pro
 20 25 30
 gtg ctg ccc atc cgt tct gag aag gag ccg ctg ccc gtt ccg gga gcg 144
 Val Leu Pro Ile Arg Ser Glu Lys Glu Pro Leu Pro Val Arg Gly Ala
 35 40 45
 gca ggc tgc acc ttc ggc ggg aag gtc tat gcc ttg gac gag acg tgg 192
 Ala Gly Cys Thr Phe Gly Gly Lys Val Tyr Ala Leu Asp Glu Thr Trp
 50 55 60
 cac ccg gac cta ggg gag cca ttc ggg gtg atg cgc tgc gtg ctg tgc 240
 His Pro Asp Leu Gly Glu Pro Phe Gly Val Met Arg Cys Val Leu Cys
 65 70 75 80
 gcc tgc gag gcg cct cag tgg ggt cgc cgt acc agg ggc cct ggc agg 288
 Ala Cys Glu Ala Pro Gln Trp Gly Arg Arg Thr Arg Gly Pro Gly Arg
 85 90 95
 gtc agc tgc aag aac atc aaa cca gag tgc cca acc ccg gcc tgt ggg 336
 Val Ser Cys Lys Asn Ile Lys Pro Glu Cys Pro Thr Pro Ala Cys Gly
 100 105 110
 cag ccg cgc cag ctg ccg gga cac tgc tgc cag acc tgc ccc cag gag 384
 Gln Pro Arg Gln Leu Pro Gly His Cys Cys Gln Thr Cys Pro Gln Glu
 115 120 125
 cgc agc agt tgc gag ccg cag ccg agc ggc ctg tcc ttc gag tat ccg 432
 Arg Ser Ser Ser Glu Arg Gln Pro Ser Gly Leu Ser Phe Glu Tyr Pro
 130 135 140
 cgg gac ccg gag cat cgc agt tat agc gac cgc ggg gag cca ggc gct 480
 Arg Asp Pro Glu His Arg Ser Tyr Ser Asp Arg Gly Glu Pro Gly Ala
 145 150 155 160
 gag gag ccg gcc cgt ggt gac ggc cac acg gac ttc gtg gcg ctg ctg 528
 Glu Glu Arg Ala Arg Gly Asp Gly His Thr Asp Phe Val Ala Leu Leu
 165 170 175

aca	ggg	ccg	agg	tcg	cag	gcg	gtg	gca	cga	gcc	cga	gtc	tcg	ctg	ctg	576
Thr	Gly	Pro	Arg	Ser	Gln	Ala	Val	Ala	Arg	Ala	Arg	Val	Ser	Leu	Leu	
			180										190			
cgc	tct	agc	ctc	cgc	ttc	tct	atc	tcc	tac	agg	cgg	ctg	gac	cgc	cct	624
Arg	Ser	Ser	Leu	Arg	Phe	Ser	Ile	Ser	Tyr	Arg	Arg	Leu	Asp	Arg	Pro	
			195				200					205				
acc	agg	atc	cgc	ttc	tca	gac	tcc	aat	ggc	agt	gtc	ctg	ttt	gag	cac	672
Thr	Arg	Ile	Arg	Phe	Ser	Asp	Ser	Asn	Gly	Ser	Val	Leu	Phe	Glu	His	
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cct	gca	gcc	ccc	acc	caa	gat	ggc	ctg	gtc	tgt	ggg	gtg	tgg	cgg	gca	720
Pro	Ala	Ala	Pro	Thr	Gln	Asp	Gly	Leu	Val	Cys	Gly	Val	Trp	Arg	Ala	
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gtg	cct	cgg	ttg	tct	ctg	cgg	ctc	ctt	agg	gca	gaa	cag	ctg	cat	gtg	768
Val	Pro	Arg	Leu	Ser	Leu	Arg	Leu	Leu	Arg	Ala	Glu	Gln	Leu	His	Val	
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gca	ctt	gtg	aca	ctc	act	cac	cct	tca	ggg	gag	gtc	tgg	ggg	cct	ctc	816
Ala	Leu	Val	Thr	Leu	Thr	His	Pro	Ser	Gly	Glu	Val	Trp	Gly	Pro	Leu	
			260					265					270			
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Ile	Arg	His	Arg	Ala	Leu	Ala	Ala	Glu	Thr	Phe	Ser	Ala	Ile	Leu	Thr	
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Leu	Glu	Gly	Pro	Pro	Gln	Gln	Gly	Val	Gly	Gly	Ile	Thr	Leu	Leu	Thr	
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ctg	ctg	gaa	ccc	agg	agt	ggg	gga	cta	acc	cag	gtt	ccc	ttg	agg	ctc	1008
Leu	Leu	Glu	Pro	Arg	Ser	Gly	Gly	Leu	Thr	Gln	Val	Pro	Leu	Arg	Leu	
				325					330					335		
cag	att	cta	cac	cag	ggg	cag	cta	ctg	cga	gaa	ctt	cag	gcc	aat	gtc	1056
Gln	Ile	Leu	His	Gln	Gly	Gln	Leu	Leu	Arg	Glu	Leu	Gln	Ala	Asn	Val	
			340					345					350			
tca	gcc	cag	gaa	cca	ggc	ttt	gct	gag	gtg	ctg	ccc	aac	ctg	aca	gtc	1104
Ser	Ala	Gln	Glu	Pro	Gly	Phe	Ala	Glu	Val	Leu	Pro	Asn	Leu	Thr	Val	
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cag	gag	atg	gac	tgg	ctg	gtg	ctg	ggg	gag	ctg	cag	atg	gcc	ctg	gag	1152
Gln	Glu	Met	Asp	Trp	Leu	Val	Leu	Gly	Glu	Leu	Gln	Met	Ala	Leu	Glu	
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Ile	Pro	Val	Gln	Thr	Gly	Ala	Ala	Gly	Ser	Ala	Ser	Leu	Thr	Leu	Leu		
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gag	gtg	gtg	gcc	atg	aca	ctg	gag	acc	aag	cct	cag	cgg	agg	gat	cag	1392	
Glu	Val	Val	Ala	Met	Thr	Leu	Glu	Thr	Lys	Pro	Gln	Arg	Arg	Asp	Gln		
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cgc	act	gtc	ctg	tgc	cac	atg	gct	gga	ctc	cag	cca	gga	gga	cac	acg	1440	
Arg	Thr	Val	Leu	Cys	His	Met	Ala	Gly	Leu	Gln	Pro	Gly	Gly	His	Thr		
				465				470				475				480	
gcc	gtg	ggg	atc	tgc	cct	ggg	ctg	ggg	gcc	cga	ggg	gct	cat	atg	ctg	1488	
Ala	Val	Gly	Ile	Cys	Pro	Gly	Leu	Gly	Ala	Arg	Gly	Ala	His	Met	Leu		
				485				490				495					
ctg	cag	aat	gag	ctc	ttc	ctg	aac	gtg	ggc	acc	aag	gac	ttc	cca	gac	1536	
Leu	Gln	Asn	Glu	Leu	Phe	Leu	Asn	Val	Gly	Thr	Lys	Asp	Phe	Pro	Asp		
				500				505				510					
gga	gag	ctt	cgg	ggg	cac	gtg	gct	gcc	ctg	ccc	tac	tgt	ggg	cat	agc	1584	
Gly	Glu	Leu	Arg	Gly	His	Val	Ala	Ala	Leu	Pro	Tyr	Cys	Gly	His	Ser		
				515				520				525					
gcc	cgc	cat	gac	acg	ctg	tcc	gtg	ccc	cta	gca	gga	gcc	ctg	gtg	cta	1632	
Ala	Arg	His	Asp	Thr	Leu	Ser	Val	Pro	Leu	Ala	Gly	Ala	Leu	Val	Leu		
				530				535				540					
ccc	cct	gtg	aag	agc	caa	gca	gca	ggg	cac	gcc	tgg	ctt	tcc	ttg	gat	1680	
Pro	Pro	Val	Lys	Ser	Gln	Ala	Ala	Gly	His	Ala	Trp	Leu	Ser	Leu	Asp		
				545				550				555				560	
acc	cac	tgt	cac	ctg	cac	tat	gaa	gtg	ctg	ctg	gct	ggg	ctt	ggg	ggc	1728	
Thr	His	Cys	His	Leu	His	Tyr	Glu	Val	Leu	Leu	Ala	Gly	Leu	Gly	Gly		
				565				570				575					
tca	gaa	caa	ggc	act	gtc	act	gcc	cac	ctc	ctt	ggg	cct	cct	gga	acg	1776	
Ser	Glu	Gln	Gly	Thr	Val	Thr	Ala	His	Leu	Leu	Gly	Pro	Pro	Gly	Thr		
				580				585				590					
cca	ggg	cct	cgg	cgg	ctg	ctg	aag	gga	ttc	tat	ggc	tca	gag	gcc	cag	1824	
Pro	Gly	Pro	Arg	Arg	Leu	Leu	Lys	Gly	Phe	Tyr	Gly	Ser	Glu	Ala	Gln		
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ggg	gtg	gtg	aag	gac	ctg	gag	ccg	gaa	ctg	ctg	cgg	cac	ctg	gca	aaa	1872	
Gly	Val	Val	Lys	Asp	Leu	Glu	Pro	Glu	Leu	Leu	Arg	His	Leu	Ala	Lys		
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ggc	atg	gcc	tcc	ctg	atg	atc	acc	acc	aag	ggg	agc	ccc	aga	ggg	gag	1920	
Gly	Met	Ala	Ser	Leu	Met	Ile	Thr	Thr	Lys	Gly	Ser	Pro	Arg	Gly	Glu		

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ctc cga ggg cag aga cga acg gtg atc tgt gac ccg gtg gtg tgc cca				1968
Leu Arg Gly Gln Arg Arg Thr Val Ile Cys Asp Pro Val Val Cys Pro				
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ccg ccc agc tgc cca cac ccg gtg cag gct ccc gac cag tgc tgc cct				2016
Pro Pro Ser Cys Pro His Pro Val Gln Ala Pro Asp Gln Cys Cys Pro				
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Val Cys Pro Glu Lys Gln Asp Val Arg Asp Leu Pro Gly Leu Pro Arg				
	675	680	685	
agc cgg gac cca gga gag ggc tgc tat ttt gat ggt gac cgg agc tgg				2112
Ser Arg Asp Pro Gly Glu Gly Cys Tyr Phe Asp Gly Asp Arg Ser Trp				
	690	695	700	
cgg gca gcg ggt acg cgg tgg cac ccc gtt gtg ccc ccc ttt ggc tta				2160
Arg Ala Ala Gly Thr Arg Trp His Pro Val Val Pro Pro Phe Gly Leu				
	705	710	715	720
att aag tgt gct gtc tgc acc tgc aag ggg ggc act gga gag gtg cac				2208
Ile Lys Cys Ala Val Cys Thr Cys Lys Gly Gly Thr Gly Glu Val His				
	725	730	735	
tgt gag aag gtg cag tgt ccc cgg ctg gcc tgt gcc cag cct gtg cgt				2256
Cys Glu Lys Val Gln Cys Pro Arg Leu Ala Cys Ala Gln Pro Val Arg				
	740	745	750	
gtc aac ccc acc gac tgc tgc aaa cag tgt cca gtg ggg tcg ggg gcc				2304
Val Asn Pro Thr Asp Cys Cys Lys Gln Cys Pro Val Gly Ser Gly Ala				
	755	760	765	
cac ccc cag ctg ggg gac ccc atg cag gct gat ggg ccc cgg ggc tgc				2352
His Pro Gln Leu Gly Asp Pro Met Gln Ala Asp Gly Pro Arg Gly Cys				
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cgt ttt gct ggg cag tgg ttc cca gag agt cag agc tgg cac ccc tca				2400
Arg Phe Ala Gly Gln Trp Phe Pro Glu Ser Gln Ser Trp His Pro Ser				
	785	790	795	800
gtg ccc cct ttt gga gag atg agc tgt atc acc tgc aga tgt ggg gca				2448
Val Pro Pro Phe Gly Glu Met Ser Cys Ile Thr Cys Arg Cys Gly Ala				
	805	810	815	
ggg gtg cct cac tgt gag cgg gat gac tgt tca ctg cca ctg tcc tgt				2496
Gly Val Pro His Cys Glu Arg Asp Asp Cys Ser Leu Pro Leu Ser Cys				
	820	825	830	
ggc tcg ggg aag gag agt cga tgc tgt tcc cgc tgc acg gcc cac cgg				2544
Gly Ser Gly Lys Glu Ser Arg Cys Cys Ser Arg Cys Thr Ala His Arg				
	835	840	845	
cgg cca gcc cca gag acc aga act gat cca gag ctg gag aaa gaa gcc				2592
Arg Pro Ala Pro Glu Thr Arg Thr Asp Pro Glu Leu Glu Lys Glu Ala				
	850	855	860	

gaa ggc tct tagggagcag ccagagggcc aagtgaccaa gaggatgggg 2641
 Glu Gly Ser
 865

cctgagctgg ggaaggggtg gcacgagga ccttcttgca ttctcctgtg ggaagcccag 2701
 tgcctttgct cctctgtcct gcctctactc ccacccccac tacctttggg aaccacagct 2761
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 35 40 45
 Ala Gly Cys Thr Phe Gly Gly Lys Val Tyr Ala Leu Asp Glu Thr Trp
 50 55 60
 His Pro Asp Leu Gly Glu Pro Phe Gly Val Met Arg Cys Val Leu Cys
 65 70 75 80
 Ala Cys Glu Ala Pro Gln Trp Gly Arg Arg Thr Arg Gly Pro Gly Arg
 85 90 95
 Val Ser Cys Lys Asn Ile Lys Pro Glu Cys Pro Thr Pro Ala Cys Gly
 100 105 110
 Gln Pro Arg Gln Leu Pro Gly His Cys Cys Gln Thr Cys Pro Gln Glu
 115 120 125
 Arg Ser Ser Ser Glu Arg Gln Pro Ser Gly Leu Ser Phe Glu Tyr Pro
 130 135 140
 Arg Asp Pro Glu His Arg Ser Tyr Ser Asp Arg Gly Glu Pro Gly Ala
 145 150 155 160
 Glu Glu Arg Ala Arg Gly Asp Gly His Thr Asp Phe Val Ala Leu Leu
 165 170 175
 Thr Gly Pro Arg Ser Gln Ala Val Ala Arg Ala Arg Val Ser Leu Leu
 180 185 190
 Arg Ser Ser Leu Arg Phe Ser Ile Ser Tyr Arg Arg Leu Asp Arg Pro
 195 200 205
 Thr Arg Ile Arg Phe Ser Asp Ser Asn Gly Ser Val Leu Phe Glu His
 210 215 220
 Pro Ala Ala Pro Thr Gln Asp Gly Leu Val Cys Gly Val Trp Arg Ala
 225 230 235 240
 Val Pro Arg Leu Ser Leu Arg Leu Leu Arg Ala Glu Gln Leu His Val
 245 250 255
 Ala Leu Val Thr Leu Thr His Pro Ser Gly Glu Val Trp Gly Pro Leu
 260 265 270
 Ile Arg His Arg Ala Leu Ala Ala Glu Thr Phe Ser Ala Ile Leu Thr
 275 280 285
 Leu Glu Gly Pro Pro Gln Gln Gly Val Gly Gly Ile Thr Leu Leu Thr
 290 295 300

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Leu	Leu	Glu	Pro	Arg	Ser	Gly	Gly	Leu	Thr	Gln	Val	Pro	Leu	Arg	Leu
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Gln	Ile	Leu	His	Gln	Gly	Gln	Leu	Leu	Arg	Glu	Leu	Gln	Ala	Asn	Val
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Ser	Ala	Gln	Glu	Pro	Gly	Phe	Ala	Glu	Val	Leu	Pro	Asn	Leu	Thr	Val
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Lys	Ser	Cys	Asp	Val	Leu	Gln	Ser	Val	Leu	Cys	Gly	Ala	Asp	Ala	Leu
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Ile	Pro	Val	Gln	Thr	Gly	Ala	Ala	Gly	Ser	Ala	Ser	Leu	Thr	Leu	Leu
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Gly	Asn	Gly	Ser	Leu	Ile	Tyr	Gln	Val	Gln	Val	Val	Gly	Thr	Ser	Ser
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Leu	Gln	Asn	Glu	Leu	Phe	Leu	Asn	Val	Gly	Thr	Lys	Asp	Phe	Pro	Asp
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Ala	Arg	His	Asp	Thr	Leu	Ser	Val	Pro	Leu	Ala	Gly	Ala	Leu	Val	Leu
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Pro	Pro	Val	Lys	Ser	Gln	Ala	Ala	Gly	His	Ala	Trp	Leu	Ser	Leu	Asp
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Thr	His	Cys	His	Leu	His	Tyr	Glu	Val	Leu	Leu	Ala	Gly	Leu	Gly	Gly
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Ser	Glu	Gln	Gly	Thr	Val	Thr	Ala	His	Leu	Leu	Gly	Pro	Pro	Gly	Thr
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Gly	Val	Val	Lys	Asp	Leu	Glu	Pro	Glu	Leu	Leu	Arg	His	Leu	Ala	Lys
	610					615				620					
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Leu	Arg	Gly	Gln	Arg	Arg	Thr	Val	Ile	Cys	Asp	Pro	Val	Val	Cys	Pro
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Pro</															

	755		760		765										
His	Pro	Gln	Leu	Gly	Asp	Pro	Met	Gln	Ala	Asp	Gly	Pro	Arg	Gly	Cys
	770					775					780				
Arg	Phe	Ala	Gly	Gln	Trp	Phe	Pro	Glu	Ser	Gln	Ser	Trp	His	Pro	Ser
785					790					795					800
Val	Pro	Pro	Phe	Gly	Glu	Met	Ser	Cys	Ile	Thr	Cys	Arg	Cys	Gly	Ala
				805					810					815	
Gly	Val	Pro	His	Cys	Glu	Arg	Asp	Asp	Cys	Ser	Leu	Pro	Leu	Ser	Cys
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Arg	Pro	Ala	Pro	Glu	Thr	Arg	Thr	Asp	Pro	Glu	Leu	Glu	Lys	Glu	Ala
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Glu	Gly	Ser													
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<212> PRT

<213> Xenopus laevis

<400> 11

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			20					25					30		
Pro	Leu	Gln	Ser	Lys	Thr	Pro	Ala	Gly	Cys	Thr	Phe	Gly	Gly	Lys	Phe
		35					40					45			
Tyr	Ser	Leu	Glu	Asp	Ser	Trp	His	Pro	Asp	Leu	Gly	Glu	Pro	Phe	Gly
	50					55					60				
Val	Met	His	Cys	Val	Leu	Cys	Tyr	Cys	Glu	Pro	Gln	Arg	Ser	Arg	Arg
65				70					75					80	
Gly	Lys	Pro	Ser	Gly	Lys	Val	Ser	Cys	Lys	Asn	Ile	Lys	His	Asp	Cys
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Pro	Ser	Pro	Ser	Cys	Ala	Asn	Pro	Ile	Leu	Leu	Pro	Leu	His	Cys	Cys
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Lys	Thr	Cys	Pro	Lys	Ala	Pro	Pro	Pro	Pro	Ile	Lys	Lys	Ser	Asp	Phe
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Val	Phe	Asp	Gly	Phe	Glu	Tyr	Phe	Gln	Glu	Lys	Asp	Asp	Asp	Leu	Tyr
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Asn	Asp	Arg	Ser	Tyr	Leu	Ser	Ser	Asp	Asp	Val	Ala	Val	Glu	Glu	Ser
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Arg	Ser	Glu	Tyr	Val	Ala	Leu	Leu	Thr	Ala	Pro	Ser	His	Val	Trp	Pro
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Pro	Val	Thr	Ser	Gly	Val	Ala	Lys	Ala	Arg	Phe	Asn	Leu	Gln	Arg	Ser
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Ser	Leu	Asn	Arg	Ser	Thr	Leu	Arg	Leu	Leu	Arg	Met	Gly	His	Ile	Leu
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Val	Ser	Leu	Val	Thr	Thr	Thr	Leu	Ser	Glu	Pro	Glu	Ile	Ser	Gly	Lys
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Thr	Pro	Glu	Asp	Ser	Asp	Glu	Thr	Gly	Gly	Gly	Gly	Leu	Ala	Met	Leu		
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Ser	His	Gln	Asn	His	Val	Ile	Arg	Glu	Leu	Tyr	Ala	Asn	Ile	Ser	Ala		
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Gln	Glu	Gln	Asp	Phe	Ala	Glu	Val	Leu	Pro	Asp	Leu	Ser	Ser	Arg	Glu		
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Met	Leu	Trp	Leu	Ala	Gln	Gly	Gln	Leu	Glu	Ile	Ser	Val	Gln	Thr	Glu		
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				405					410				415				
Thr	Lys	Thr	Gly	Ala	Val	Gly	Ser	Ala	Ser	Ile	Thr	Leu	His	Glu	Asn		
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Thr	Ala	Val	Thr	Leu	Glu	Thr	Lys	Pro	Arg	Arg	Lys	Thr	Lys	Arg	Asn		
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Ile	Leu	His	Asp	Met	Ser	Lys	Asp	Tyr	His	Asp	Gly	Arg	Val	Trp	Gly		
465					470					475					480		
Tyr	Trp	Ile	Asp	Ala	Asn	Ala	Arg	Asp	Leu	His	Met	Leu	Leu	Gln	Ser		
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Arg	Gly	Gln	Ile	Thr	Pro	Leu	Leu	Tyr	Ser	Gly	Leu	Trp	Ala	Arg	Tyr		
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Glu	Lys	Leu	Pro	Val	Pro	Leu	Ala	Gly	Gln	Phe	Val	Ser	Pro	Pro	Ile		
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				565					570					575			
Ala	Ala	Leu	Asn	Ala	His	Leu	His	Gly	Phe	Ala	Glu	Leu	Gly	Glu	Val		
			580					585					590				
Gly	Glu	Ser	Ser	Pro	Gly	His	Lys	Arg	Leu	Leu	Lys	Gly	Phe	Tyr	Gly		
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His	Leu	Ser	Arg	Gly	Thr	Ala	Phe	Ile	Gln	Val	Ser	Thr	Lys	Leu	Asn		
625					630					635					640		
Pro	Arg	Gly	Glu	Ile	Arg	Gly	Gln	Ile	His	Ile	Pro	Asn	Ser	Cys	Glu		
				645					650					655			
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			660					665					670				
Ile	Tyr	Glu	Glu	Gly	Arg	Gln	Arg	Asp	Pro	Asp	Asp	Leu	Arg	Lys	Asp		
	675					680						685					
Pro	Arg	Ala	Cys	Ser	Phe	Glu	Gly	Gln	Leu	Arg	Ala	His	Gly	Ser	Arg		
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Trp	Ala	Pro	Asp	Tyr	Asp	Arg	Lys	Cys	Ser	Val	Cys	Ser	Cys	Gln	Lys		
705					710					715					720		
Arg	Thr	Val	Ile	Cys	Asp	Pro	Ile	Val	Cys	Pro	Pro	Leu	Asn	Cys	Ser		
				725					730					735			

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 Lys Glu Met Arg Glu Val Lys Lys Pro Glu Arg Ala Arg Thr Ser Glu
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 Gly Cys Phe Phe Asp Gly Asp Arg Ser Trp Lys Ala Ala Gly Thr Arg
 770 775 780
 Trp His Pro Phe Val Pro Pro Phe Gly Leu Ile Lys Cys Ala Ile Cys
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 Cys Lys Gln Cys Pro Val Glu Glu Arg Ser Pro Met Glu Leu Ala Asp
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 Tyr Pro Asn His Glu Arg Trp His Pro Thr Val Pro Pro Phe Gly Glu
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 885 890 895
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